

WHAT IS CLAIMED IS:

1. A method for installing an expandible stiffener, said method comprising:

providing an assembly including a first sidewall and a second sidewall connected at a leading and trailing edge such that a cavity is defined therebetween;

forming an opening extending through the first sidewall and the second sidewall;

inserting a first expandible sleeve through the assembly opening such that the sleeve extends between the first and second strut sidewalls; and

coupling the sleeve to the first and second sidewalls.

2. A method in accordance with Claim 1 wherein forming an opening further comprises using an alignment fixture to ensure the first sidewall opening is concentrically aligned with the second sidewall opening.

3. A method in accordance with Claim 1 wherein coupling the sleeve further comprises radially expanding the sleeve within the first sidewall and the second sidewall to secure the sleeve within the strut.

4. A method in accordance with Claim 3 wherein radially expanding the sleeve further comprises drawing a mandrel through the sleeve to secure the sleeve to the sidewalls.

5. A method in accordance with Claim 4 wherein drawing a mandrel through the sleeve further comprises drawing the mandrel from a first end of the sleeve through the sleeve and through a second end of the sleeve.

6. A method in accordance with Claim 1 wherein inserting a first expandible sleeve through the opening further comprises inserting a first sleeve through the opening such that the sleeve extends through both the first and second sidewalls and is configured to couple the first sidewall to the second sidewall.

7. A method in accordance with Claim 1 further comprising inserting a second sleeve into the opening such that the second sleeve extends from at least one of the first and second sidewalls partially across the cavity.

8. A method in accordance with Claim 7 wherein inserting a second sleeve into the opening further comprises inserting a second sleeve into the opening such that at least a portion of the first sleeve is radially inward from the second sleeve.

9. A method in accordance with Claim 7 wherein inserting a second sleeve into the opening further comprises inserting a second sleeve into the opening such that a gap is defined between an end of the second sleeve and a portion of the first sleeve.

10. A method in accordance with Claim 1 wherein inserting a first expandable sleeve through the opening further comprises inserting a first expandable sleeve through the opening, wherein the first sleeve includes a first portion having a diameter approximately equal a diameter of the assembly opening, and a second portion having a smaller diameter than the assembly opening diameter.

11. A method in accordance with Claim 10 further comprising inserting a second sleeve into the opening such that the second sleeve extends from at least one of the first and second sidewalls partially across the cavity, and such that the second sleeve extends circumferentially around the first sleeve second portion.

12. A method in accordance with Claim 11 wherein inserting a second sleeve into the opening further comprises inserting a second sleeve having a diameter that is approximately equal the assembly opening diameter into the opening such that a gap is defined between an end of the second sleeve and the first sleeve first portion.

13. A strut for a gas turbine engine, said strut comprising:

a first sidewall comprising an opening extending therethrough;

a second sidewall connected to said first sidewall at a leading edge and at a trailing edge, such that a cavity is defined between said first and second sidewalls,

said second sidewall comprising an opening extending therethrough and concentrically aligned with respect to said first sidewall opening; and

at least one expandable sleeve extending through said first and second sidewall openings and between said first sidewall and said second sidewall, said sleeve configured to facilitate increasing a fatigue life of said strut.

14. A strut in accordance with Claim 13 wherein said at least one expandable sleeve coupled within said strut by drawing a mandrel through said sleeve from a first end of said sleeve to a second end of said sleeve, such that said sleeve is radially expanded within said first and second sidewall openings.

15. A strut in accordance with Claim 13 wherein said at least one sleeve further comprises a first sleeve and concentrically aligned a second sleeve, said first sleeve extending between said first and second sidewalls and comprising a first portion having a first diameter and a second portion having a second diameter.

16. A strut in accordance with Claim 15 wherein said second sleeve extends partially through said strut cavity from at least one of said first sidewall and said second sidewall.

17. A strut in accordance with Claim 16 wherein said second sleeve has a diameter that is approximately equal that of said first sleeve first diameter, said second sleeve diameter approximately equal a diameter of said first and second sidewall openings.

18. A strut in accordance with Claim 17 wherein said first sleeve second diameter smaller than said first sleeve first diameter, said second sleeve extending circumferentially around said first sleeve second portion.

19. A strut in accordance with Claim 16 wherein said second sleeve comprises an inner end and a chamfered outer end.

20. A strut in accordance with Claim 19 wherein said second sleeve inner end a distance from said first sleeve such that a predetermined gap is defined between said first sleeve and said second sleeve.